

## **REMARKS**

This paper is presented in response to the Office Action. By this paper, claims 18 and 26 are canceled, claims 1-4, 6, 8-11, 14-15 and 19 are amended, and new claims 27 and 28 are added. Claims 1-17, 19, 25, 27 and 28 are now pending in view of the aforementioned cancellations and new claims.

Reconsideration of the application is respectfully requested in view of the aforementioned amendments and the following remarks. For the convenience and reference of the Examiner, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

### **I. General Considerations**

Applicant notes that the remarks and amendments presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such remarks, or a lack of remarks, and amendments are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicant: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Examiner; or as to any other assertions, allegations or characterizations made by the Examiner at any time in this case. Applicant reserves the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

In addition, the remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed herein are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose contemporaneous or future consideration, by the Applicant, of additional or alternative distinctions between the claims of the present application and any references cited by the Examiner, and/or the merits of additional or alternative arguments.

### **II. Objection to the Drawings**

The Examiner has objected to the drawings, alleging that Figure 1 should be designated as prior art. In view of the Replacement Sheet 1 submitted herewith, Applicant respectfully submits that the objection to the drawings has been overcome and should be withdrawn.

### **III. Rejection of Claims 1-4, 7-10 and 26 under 35 U.S.C. § 102**

Applicant respectfully notes that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (c) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single

prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *MPEP* § 2131.

The Examiner has rejected claims 1-4, 7-10 and 26 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,835,783 to Suyama et al. ("*Suyama*"). Applicant respectfully submits that for at least the reasons set forth below, the rejection is moot and should accordingly be withdrawn. Of the rejected claims, claim 26 has been canceled herein thereby making the rejection moot regarding those claims. Accordingly, Applicant respectfully submits that the rejection of claim 26 should be withdrawn.

By this paper, Applicant has amended independent claim 1 to recite, among other things, "...a metal contact layer extending over at least a portion of said ridge waveguide and terminating short of the semiconductor mesa..." Applicant has also amended independent claim 8 to recite, in part "...an insulating film disposed on a portion of said ridge waveguide and on said semiconductor mesas; and a metal contact layer that covers at least a portion of said ridge waveguide, said metal contact layer terminating short of said semiconductor mesas such that respective portions of said semiconductor mesas are uncovered by said metal contact layer." Support for these amendments to claims 1 and 8 can be found, for example, at least at Figures 3 and 4 of the application.

In contrast, the Examiner has not established that *Suyama*, either alone or in combination with any other reference, teaches or suggests the aforementioned limitations in combination with the other limitations of claims 1 and 8.

In light of the foregoing, Applicant respectfully submits that the Examiner has not established that *Suyama* anticipates claims 1 or 8, at least because the Examiner has not established that each and every element as set forth in claims 1 and 8 is found in *Suyama*, because the Examiner has not established that the identical invention is shown in *Suyama* in as complete detail as is contained in amended claims 1 and 8, and because the Examiner has not shown that *Suyama* discloses the elements of claim 1 and 8 arranged as required by those claims.

Applicant thus respectfully submits that the rejection of claims 1 and 8, as well as the rejection of corresponding dependent claims 2-4, 7, 9 and 10, should be withdrawn.

#### **IV. Rejection of Claims 5, 6, 11-19 and 25 under 35 U.S.C. § 103**

Applicant respectfully notes at the outset that in order to establish a *prima facie* case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a

reasonable expectation of success; and third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP* § 2143.

The Examiner has rejected claims 5, 6, 11-19 and 25 under 35 U.S.C. § 103(a) as being unpatentable over *Suyama*. Applicant respectfully disagrees.

**a. claims 5, 6, 11-13 and 25**

Claims 5, 6, 11-13 and 25 variously depend from claims 1 and 8, which, as noted previously, have been amended herein. By virtue of their dependence from one of independent claims 1 or 8, dependent claims 5, 6, 11-13 and 25 each require "...a metal contact layer extending over at least a portion of said ridge waveguide and terminating short of the semiconductor mesa..." or "...an insulating film disposed on a portion of said ridge waveguide and on said semiconductor mesas; and a metal contact layer that covers at least a portion of said ridge waveguide, said metal contact layer terminating short of said semiconductor mesas such that respective portions of said semiconductor mesas are uncovered by said metal contact layer."

As discussed at III. above however, the Examiner has not established that the aforementioned limitations, in combination with the other limitations of the rejected claims, are taught or suggested by *Suyama* or by any other reference(s). Thus, even if the purported disclosure of *Suyama* is modified in the allegedly obvious manner set forth in the Office Action, the resulting combination nonetheless fails to include all the limitations of the rejected claims.

In light of the foregoing, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 5, 6, 11-13 and 25, at least because the Examiner has not established that the purportedly obvious modification of *Suyama* results in a combination that teaches or suggests all the limitations of claims 5, 6, 11-13 and 25. Applicant thus respectfully submits that the rejection of claims 5, 6, 11-13 and 25 should be withdrawn.

**b. claims 14-19**

By this paper, Applicant has amended independent claim 14 to recite "...a metal contact layer extending over said ridge waveguide; and a semiconductor mesa formed on said semiconductor contact layer, said semiconductor mesa extending a distance above a top surface of said metal contact layer to form an elevated surface, and said semiconductor mesa arranged such that said metal contact layer terminates short of said semiconductor mesa." Support for the amendment to claim 14 can be found, for example, at least at Figures 3 and 4 of the application.

In contrast, the Examiner has not established that *Suyama*, either alone or in combination with any other reference, teaches or suggests the aforementioned limitation in combination with the other limitations of claim 14. Thus, even if the purported disclosure of *Suyama* is modified in the allegedly

obvious manner set forth in the Office Action, the resulting combination nonetheless fails to include all the limitations of the rejected claim 14.

In light of the foregoing, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness with respect to claim 14, at least because the Examiner has not established that the purportedly obvious modification of *Suyama* results in a combination that teaches or suggests all the limitations of claim 14. Applicant thus respectfully submits that the rejection of claim 14, as well as the rejection of corresponding dependent claims 15-19, should be withdrawn.

**V. New Claims 27 and 28**

By this paper, Applicant has added new claims 27 and 28. Support for the new claims can be found in the application, for example, at least at Figures 3 and 4 of the application. New claims 27 and 28 are believed to be in allowable condition for at least the reasons set forth herein.

**CONCLUSION**

In view of the remarks submitted herein, Applicant respectfully submits that each of the pending claims 1-17, 19, 25, 27 and 28 is in condition for allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 6th day of November 2006.

Respectfully submitted,  
/Peter F. Malen, Jr./

Peter F. Malen Jr.  
Attorney for Applicants  
Registration No. 45,576  
Customer No. 022913  
Telephone: (801) 533-9800

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